

Carbohydrate Awareness



Nutrition and Dietetics

Who is this leaflet for?

This leaflet is for you if you want to improve your blood glucose control through better carbohydrate awareness. It is for the following people diagnosed as having:

- Gestational diabetes
- Type 1 diabetes on 2-3 times daily insulin eg: Novomix 30 ® or Humalog mix ®
- Type 2 diabetes on insulin or tablets known as sulphonylureas eg: Gliclazide ®

What is Carbohydrate awareness?

Blood glucose levels are affected by many things including activity, stress, illness, alcohol, diabetes medications and the foods we eat. The aim of this leaflet is to improve your awareness of foods that affect your blood glucose levels ie: carbohydrates.

All carbohydrates breakdown into the simplest form of sugar. This is known as glucose. Glucose is used as a source of fuel by the body cells so is a very important part of our diet. Insulin is the hormone that helps transfer the glucose from the blood into these cells. If you are not producing insulin or your insulin is not working effectively, your blood glucose levels could rise too high.

Avoid skipping meals or having too little carbohydrate with your meals. This is particularly important if you are on medications that cause an increase in insulin. This could increase the risk of your blood glucose levels dropping too low (known as hypoglycaemia or 'a hypo').

If your carbohydrate portions are too large, you are at risk of your blood glucose levels rising too high, whether you are on diabetes medications or not.

Having regular carbohydrate containing meals, and managing your portions may therefore help improve your blood glucose control.

Which foods contain carbohydrates?

Carbohydrates can be found in many different foods. The 2 main sources are sugars and starch.

- Starches include bread, potatoes, rice, pasta, breakfast cereals and foods made with flour eg: biscuits and cakes
- Sugars include:
 - Sucrose – found in table sugar, honey and foods made with sugar such as sweets and chocolate
 - Fructose – found in fruit and fruit juices
 - Lactose – found in milk and yoghurt

Which foods do not or contain very little carbohydrates?

Fats and proteins do not break down to glucose. Vegetables also contain very little carbohydrate. The following therefore will not directly affect your blood glucose levels:

- Vegetables – fresh or cooked
- Meat, fish, eggs, cheese – unless processed eg: breaded or battered
- Fats – oils, spread and butter

(Please be aware that our body compensates if we don't eat carbohydrates. They will breakdown stores and release glucose into the blood stream. Therefore cutting carbohydrates completely will not stop your blood glucose rising. It is therefore best to eat small portions of carbohydrates regularly through the day.)

Identifying carbohydrates

Here are a few examples of meals. Which foods do you think contain carbohydrates?

- A roast meal with roast potatoes, vegetables, and roast chicken
 - Just the potatoes
- A sandwich with 2 slices of bread, butter and a slice of cheese
 - Just the bread
- 2 Weetabix, 2 tsp sugar and 200ml of milk
 - Weetabix, sugar and milk
- A green salad with grilled chicken and light salad dressing
 - Nothing!

Is it just sugary foods that I need to monitor?

All carbohydrates will affect your blood glucose levels. Whether it is a starch or sugar, it still breaks down into the same thing – glucose. Therefore all carbohydrate foods will raise your blood glucose levels.

Some carbohydrate foods breakdown more quickly, causing a rapid rise in blood glucose levels, while others break down more slowly, causing a more gradual rise. This is known as the glycaemic index (GI). If you want further information on this, please ask your dietitian.

For the purpose of this leaflet, we are focusing on the amount of carbohydrate as this will have the greatest effect on your blood glucose levels.

A quick guide to carbohydrate portions:

To make it easier, we classify every 10g of carbohydrate as a carbohydrate portion (CP)

Food	Quantity	CP
Bread and cereals		
Bread	1 medium slice	1 ½
Bap or bread roll	1small	2 ½
French stick	1 inch slice	1
Bagel	1	4
Pitta bread	1 standard	3
Tortilla wrap	Medium (40g)	2
Cracker	2	1
Most breakfast cereals	30-40g	2 ½
Unsweetened muesli	50g	3
Weetabix	2	2 ½
Shredded wheat	1	1 ½
Porridge made with milk	200g	3
Pasta, rice and couscous		
Cooked pasta – noodles and spaghetti	½ cup	1
	1 heaped Tbsp	1 ½
Cooked rice	1Tbsp	2
Cooked Couscous		

Food	Quantity	CP
Starchy vegetables and legumes		
Boiled potato	1 medium	1
Cooked new potato with skin	1 egg size	1
Baked potato with skin	Small fist size (medium-150g)	5
Boiled sweet potato		
Chips	2 small (130g)	2 ½
Mashed potato	3-4 medium cut	1
Beans (baked beans, red kidney beans etc)	1 ice-cream scoop	1
	1 small tin	1 ½
Milk and yoghurt		
Milk (semi-skimmed/skimmed)	200ml	1
Low-fat yoghurt	1 small pot (125g)	1 ½
	¼ pot (125g)	½
Greek yoghurt		
Fruit		
Fresh fruit	1 handful	1 ½
Fruit juice	100ml glass	1
Dried fruit	1 Tbsp	1 ½

So how much do I need?

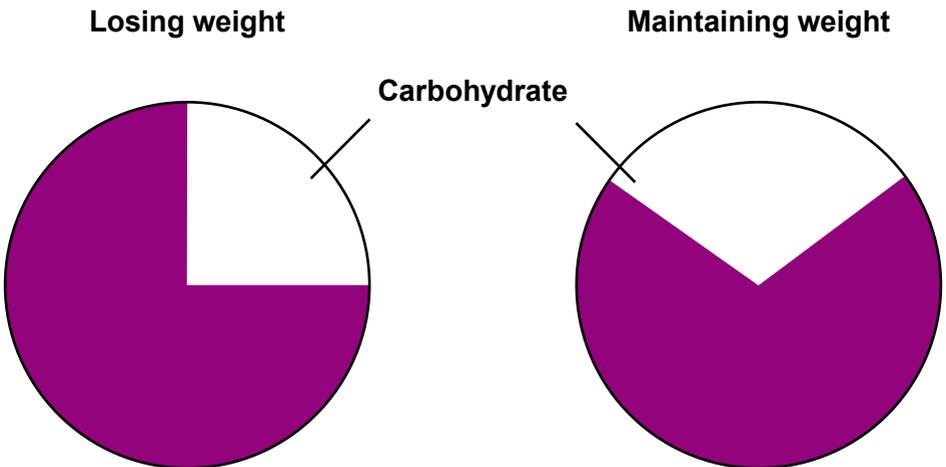
Everyone is unique – age, height, weight, activity etc so the amount you need will be individual. If you are on any of the medications listed above or have gestational diabetes, it is important to have carbohydrate with every meal. Having similar amounts of carbohydrate through the day can help even out your blood glucose levels.

Start by reviewing your current portions and making small changes around this. Remember to discuss with your diabetes nurse/doctor if making big changes to your carbohydrate as your diabetes medication may need changing to prevent hypoglycaemia.

You can use the following as a rough guide to portion control. If this is very different to what you are currently doing, discuss with your diabetes nurse or doctor before making changes.

If you are trying to lose weight you could aim for 40-50g carbohydrate (4-5CPs) per meal. If you are maintaining your weight, you could aim for 50-75g (5-7 ½ CPs) per meal. You can also have up to 20g carbohydrate (2CPs) as snacks between meals. Remember that the above is only an average so if you want more individualised advice, please discuss with your dietitian.

A simple guide to portions is aiming for a quarter of a plate as carbohydrate if you want to lose weight or a third of your plate as carbohydrate if you are want to maintain weight. Remember, if trying to lose weight, watch your fat content. Fats are very high in calories so keep these low. Rather fill up on vegetables.



Can I have snacks?

To prevent your blood glucose levels rising too high, try to have no more than 20g carbohydrate (2CPs) between meals. Remember that extra snacks will mean extra calories. If you are trying to lose weight, try to choose low calorie snacks such as fruit.

What do I do if I am active?

If you are keeping active, there are various things you could do.

- Have a small carbohydrate snack
- Have a little more carbohydrate at your previous meal
- Discuss your dose of diabetes medication with your nurse/doctor if you are trying to lose weight and don't want to increase your carbohydrate. If your activity is regular, you may need changes to your diabetes medication.

Key messages

Eat regular, carbohydrate containing meals – roughly 4-6 hours apart

- Do not skip meals
- Keep your carbohydrate at mealtimes consistent
- Monitor your blood glucose to review the effects of changes to carbohydrates and activity on your levels

Reference source(s):

- Diabetes UK

<http://www.diabetes.org.uk/Documents/Reports/nutritional-guidelines-2013-amendment-0413.pdf>

www.diabetes.org.uk/Professionals/Position-statements-reports/Food-nutrition-lifestyle/Consumption-of-carbohydrate-in-people-with-diabetes/

- Carbohydrate Reference List, Diabetes UK (e-book)

- Carbs and Cals: A visual guide to carbohydrate counting and calorie counting for people with diabetes, Chris Cheyette and YelloBalolia, published (2013) by Chello Publishing Limited

Useful resources:

- Carbs and Cals: A visual guide to carbohydrate counting and calorie counting for people with diabetes, Chris Cheyette and YelloBalolia, published (2013) by Chello Publishing Limited

- Carbs and Cals app. www.carbsandcals.com/apps Available from App Store and Google Play

- Diabetes UK. www.diabetes.org.uk

Contact details

If you have any questions about the information in this leaflet please contact the Dietetic Department at the address below:

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PALS and Advocacy contact details

Contact details of independent advocacy services can be provided by our Patient Advice and Liaison Service (PALS) who are located on the right hand side as you enter the main reception area. PALS are also your first point of contact for health related issues, questions or concerns surrounding RSCH patient services.

Telephone: 01483 402757

Email: rsc-tr.pals@nhs.net

Opening hours: 9.00am–3.00pm, Monday to Friday

If you would like information documents in large print, on tape or in another language or form please contact PALS.

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